

Plant Products in Aquafeed



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Aquaculture growing

Since 1990, the (aquaculture) industry has been growing at an average compound rate of around 10% a year. It is probably the world's fastest growing form of food production. By comparison, farmed meat production grew by 2.8%.

(Blue Revolution, The Economist, 8/7/2003)



Plant sources of protein

Processed soybeans are the largest source of protein feed (65%) and vegetable oil in the world.

The United States is the world's leading soybean producer and exporter.

Farm value of U.S. soybean production in 2003/04 was \$18.0 billion.

43% of the US soybean production is exported.

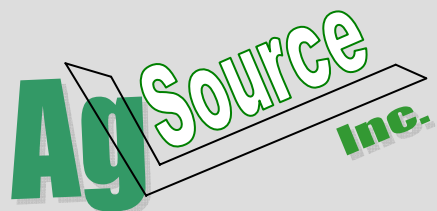


United Soybean Board

Farmer-led group 681,000 U.S. soybean farmers

Funds from checkoff (.5% gross = \$60m)

Invest checkoff funds to benefit U.S. soybean producers





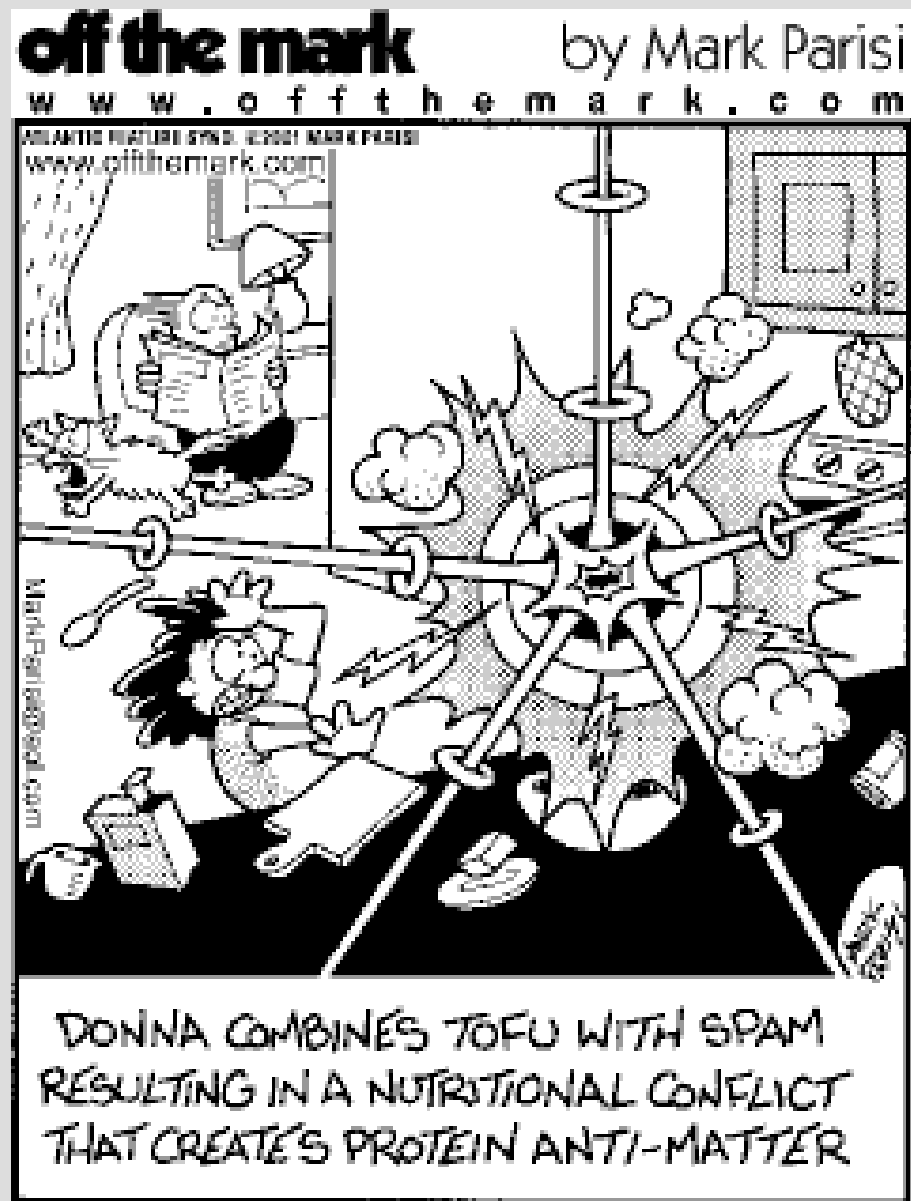
Membership-driven (25,000), grassroots policy organization that represents U.S. soybean farmers.

Membership establishes policy goals

ASA testifies before Congress, lobbies Congress and the Administration, contacts members, and meets with the media.



The Challenge



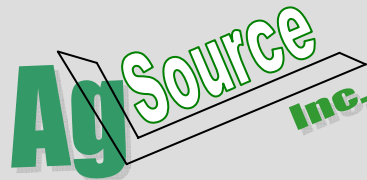
The Challenge



8,000 years of agriculture →
commercial, genetically
homogeneous varieties of animals
and their feed

Process for identifying priorities and allocating resources

- Industry defines obstacles to or opportunities for increasing profits
- Scientists identify tools and strategies available to surmount obstacles
- Resources matched to research projects:



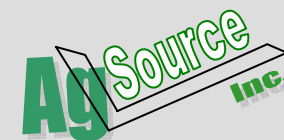
Plant Products in Aquafeed (PPA) Working Group

- Chaired by Delbert Gatlin, Texas A&M
- PPA White Paper – “Optimizing Plant Products in Aquafeed”



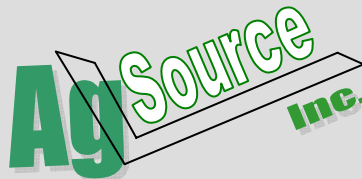
Plant Products in Aquafeed (PPA) Strategic Research Plan

- 7 goals, 7 writing teams
- Input from more than 30 researchers from 6 countries
- Included experts from USDA/ARS, USDA/CSREES, and NOAA



Process for identifying priorities and allocating resources

- **Industry defines obstacles to increasing profits**
- **Scientists identify tools and strategies available to surmount obstacles**
- Resources matched to research projects:
 - Align ongoing programs with industry needs
 - Facilitate scientists obtaining grants
 - Spend “green” capital --- Check-off \$\$
 - Spend political capital ---Congress



PPA Strategic Plan - GOALS

GOAL 7:

OBJECTIVE: Establish a framework for effectively coordinating the research, exchange of data, and establishment of standards for research performed under this umbrella.

PM 7.1

Build a matrix/database of compounds in plants on which the affect on fish has been studied. Include references. Include compounds from plants to which the response is known and compounds for which the response is not known or for which the data is mixed. Include data from research performed under this umbrella and from outside sources on nutrient requirements, bioavailability and bioactivity, physiological response, processing options and affect on palatability.

Baseline: There is a plethora of literature, reports and accumulated data that describes the effects of incorporating plant products into carnivorous fish feed.

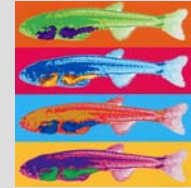
*Target 2008: **Fish nutrition and growth data in response to plant-inclusion in feed used are gathered and compiled.** Information on baseline ingredients as well as improved ingredients and the processing technologies used to make the feed is included. Relational database is available on web.*

Target 2010: Produce a web accessible database of relevant fish and plant species that builds a matrix of available quantities of material available in plant feeds and the requirements of fish. Have a mechanism for dynamic updates of the database in place to provide up to date data in the future.



GOAL 3:

Performance Measure 3.3



Develop standardized methodologies for determining feed intake, palatability, flesh quality and other factors to be used in fish genetics screening programs.

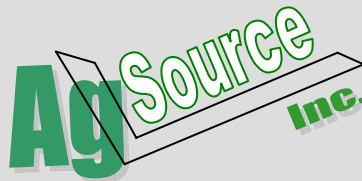
Baseline: Costly and scattered methods for feed intake and palatability determination in individual and groups of fish and for studies of palatability of single components.

Target 2008: Simplified protocols for determination of feed intake and palatability in individual and groups of fish and for studies of palatability of single components are under evaluation for suitability

Target 2010: Recommendations and guidelines for the use of low cost protocols for determination of feed intake and palatability suitable for genetic screening programs are established.

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